

Notice of Allowability

Application No.

09/921,423

Applicant(s)

THAKUR ET AL.

Examiner

Johannes P. Mondt

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Rule 312 Amendment filed 5/4/05.
2. ☒ The allowed claim(s) is/are 1-9, 11 and 12.
3. ☒ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Amendment

The proposed Amendment After Allowance (Rule 312) has been entered only in part: specifically all amendments have been entered except for the amendment to claim 12. However, an amendment to claim 12 other than the one proposed in said proposed Amendment must be made because of the different name used for the "at least one electrode" as claimed in claim 9 as opposed to the "conductive layer" in dependent claim 12. Therefore, the following supplemental action replacing the previous notice of allowance with a new notice of allowance based on the status of the application after entering said examiner's amendment according to Rule 312 and replacing the previous notice of allowance is needed to correct claim 12.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Duzan on 5/27/05.

BEGIN EXAMINER'S AMENDMENT

The application has been amended as follows:

Claim 12: the wording "conductive layer" (line 2) has been replaced by "at least one electrode layer".

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Claim 12: the wording "memory device" (line 1) has been replaced by "semiconductor memory device".

END EXAMINER'S AMENDMENT

2. The following is an examiner's statement of reasons for allowance: ***claims 1-9 and 11-12 are allowed.***

1. *The following is an examiner's statement of reasons for allowance:* strictly within the context of independent claims 1-9, a semiconductor memory device with capacitor wherein at least one layer of germanium borophosphosilicate glass has a portion that is in contact with a layer of borophosphosilicate glass has not been found in the prior art. Although semiconductor memory devices with capacitor cell including either borophosphosilicate glass or germanium borophosphosilicate glass as materials along roughened interfaces are known (see, e.g., Ando (6,097,053), Sandhu et al (6,249,019 B1), Sandhu et al (6,124,607) as made of record by Applicant through the IDS filed 10/21/2004), within the context of independent claims 1 through 9 a semiconductor memory device wherein a portion of a layer of germanium boro-phosphosilicate glass contacts at least a portion of a layer of boro-phosphosilicate glass has not been found. In this regard it is noted in particular in light of Applicant's filing of aforementioned IDS that while in Sandhu et al (6,249,019 B1) layer 312 comprises germanium borophosphosilicate (col. 6, l. 45-61) the layer in contact therewith is (amorphous, poly-) silicon (col. 7, 21-30), not *borophosphosilicate* glass (BPSG).

Finally, Sandhu (US 2003/0038309 A1; USPAT 6204,196, USPAT 6,040,020) herewith made of record by examiner teach the exploitation of the

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material differences between BPSG and Ge-BPSG for surface planarization layers (see e.g. section [0020] in US 2003/0038309), not for capacitor sidewall layers. An update search has not revealed pertinent art.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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JPM
May 27, 2005